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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,977	06/07/2001	Yukio Nishimura	5988-031-27	5980

7590

09/17/2002

Supervisor, Patent Prosecution Services
PIPER MARBURY RUDNICK & WOLFE LLP
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Washington, DC 20036-2412

EXAMINER

ASHTON, ROSEMARY E

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 09/17/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/874,977

Applicant(s)

NISHIMURA ET AL.

Examiner

Rosemary E. Ashton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 25 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 11-16 is/are rejected.
- 7) ☒ Claim(s) 2-20¹⁹ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

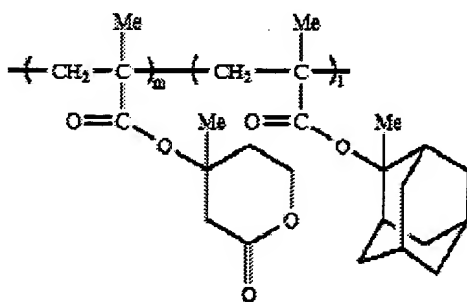
(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1,11,12,16 are rejected under 35 U.S.C. 102(b) as being anticipated by Nozaki et al U.S. patent no. 5,968,713.

Nozaki teaches a chemically amplified photoresist composition comprising a photoacid generator and a polymer comprising a lactone monomer and an alicyclic monomer as shown in col. 21 and repeated below:

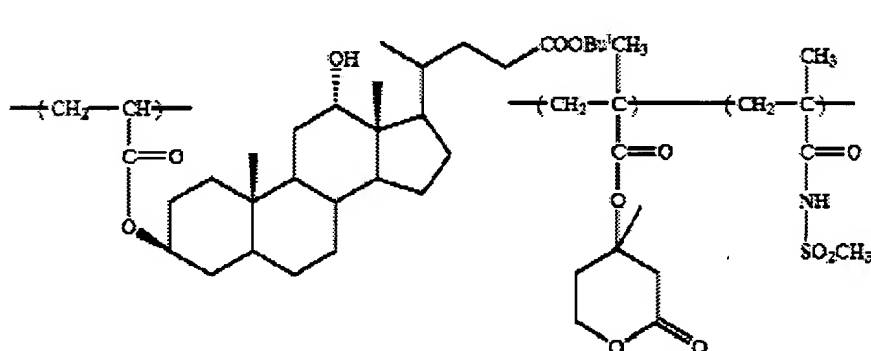
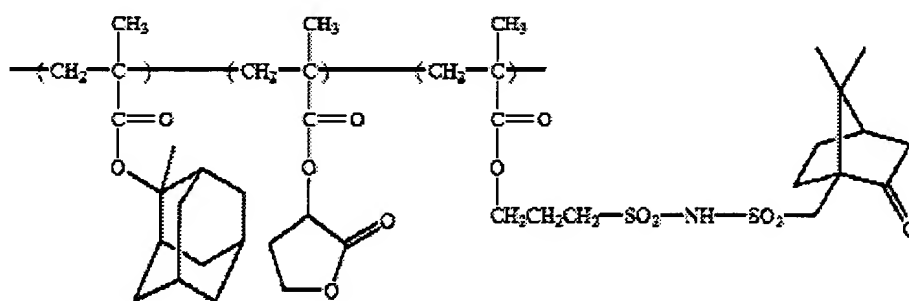


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The polymer is formed in example 2 in col. 42 and as an Mw of 11,860. The polymer is used in a photoresist composition with the onium photoacid generator triphenyl sulfonium triflate in propylene glycol methylether acetate.

3. Claims 1,11-14,16 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato et al U.S. patent no. 6,420,082.

Sato teaches a chemically amplified photoresist composition comprising a photoacid generator and a polymer comprising a lactone monomer and an alicyclic monomer as shown in polymers (III) to (X) in col. 79-80. For example, polymers (IV) and (VII) are shown below:



As shown in col. 82, lines 60-67 and Table 5 in col. 83, the polymers above are combined with a sulfonium photoacid generator and propylene glycol monomethyl ether acetate to form a resist composition.

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As to claims 13,14 in col. 70, lines 62-65 and col. 71, lines 1-3 Sato teaches the resist composition may also have an organic basic compound, which one skilled in the art envisions as a nitrogen basic compound well known in the art to control acid diffusion.

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4. Claims 1,¹¹⁻¹⁶~~11-14,16~~ are rejected under 35 U.S.C. 102(e) as being anticipated by Wallow et al U.S. patent no. 6,251,560.

Wallow teaches a chemically amplified photoresist composition comprising a photoacid generator and a polymer comprising a lactone monomer (col. 5, lines 1-40). The photoacid generator is an onium salt (col. 6, lines 63-67). The composition has an alicyclic additive with acid labile groups such as t-butyl-3-trifluoroacetylthiocholate as in claim 15 (col. 7, lines 10-35) as well as a base additive as in claims 13 and 14 (col. 7, lines 44-52). The molecular weight of the polymer is 5,000-100,000 as in claim 11 (col. 8, lines 14-17).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al cited above in view of Chang et al. U.S. patent no. 6,265,131.

Sato teaches the resist composition may comprise an acid-decomposable dissolution inhibitor (DI, col. 70, lines 62-65), however, it does not teach the DI is an alicyclic compound.

In col. 2, formula (I) Chang teaches an alicyclic compound acting as a DI in a chemically amplified photoresist composition.

It would have been obvious to one of ordinary skill in the art to add the DI taught in Chang to the resist composition of Sato with a reasonable expectation of obtaining a successful photoresist composition with improved resolution because Sato teaches the composition may comprise a DI and Chang teaches the DI provides high resolution and high sensitivity to a chemically amplified photoresist composition.

Allowable Subject Matter

8. Claims 2-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:
The prior art does not teach the polymers claimed.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosemary E. Ashton whose telephone number is 308-2057. The examiner works a flexible work schedule and can normally be reached M-F between 10:00 am and 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.



Rosemary E. Ashton
Primary Examiner
Art Unit 1752

rea
September 12, 2002

ROSEMARY ASHTON
PRIMARY EXAMINER